

CLAIMS

What is claimed is:

- 5           1.       *A three mirror anastigmatic optic comprising:*  
              a primary mirror;  
              a secondary mirror;  
              a tertiary mirror; and  
              a vertex common to said primary and tertiary mirrors.
- 10           2.       The optic of claim 1 wherein all said mirrors share a common alignment axis.
3.       The optic of claim 2 having tilt coincident to said common alignment axis.
- 15           4.       The optic of claim 1 having a stop at said secondary mirror.
5.       The optic of claim 1 additionally comprising a hole at a junction of said primary and  
              tertiary mirrors.
- 20           6.       The optic of claim 5 wherein said optic undergoes alignment by insertion through the  
              hole of one or both of a rod and a laser.
7.       The optic of claim 1 wherein said primary and said tertiary mirrors are diamond turned  
              with a common fixture.
- 25           8.       The optic of claim 1 additionally comprising an imaging sensor located at an imaging  
              plane in an optical path following said tertiary mirror and wherein focusing occurs only via movement of  
              said secondary mirror.

9. An optical system comprising a three mirror anastigmatic optic according to claim 1.

10. An optical system according to claim 9 selected from the group consisting of  
5 hyperspectral imaging sensors, multispectral imaging sensors, infrared imaging systems, electro-optical targeting systems, and remote sensors.

11. A method of making a three mirror anastigmatic optic, the method comprising the steps  
of:  
10 placing primary, secondary, and tertiary mirrors; and  
employing a vertex common to the primary and tertiary mirrors.

12. The method of claim 11 wherein the placing step comprises placing all the mirrors such  
that they share a common alignment axis.  
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13. The method of claim 12 wherein the optic has tilt coincident to the common alignment  
axis.

14. The method of claim 11 additionally comprising the step of forming a stop at the  
20 secondary mirror.

15. The method of claim 11 additionally comprising the step of forming a hole at a junction of  
the primary and tertiary mirrors.

16. The method of claim 15 additionally comprising the step of aligning the optic by insertion  
25 through the hole of one or both of a rod and a laser.

17. The method of claim 11 additionally comprising the step of diamond turning the primary and the tertiary mirrors with a common fixture.

5 18. The method of claim 11 additionally comprising the steps of locating an imaging sensor at an imaging plane in an optical path following the tertiary mirror and focusing only via movement of the secondary mirror.

10 19. An anastigmatic optics method comprising the steps of:  
placing primary, secondary, and tertiary mirrors;  
employing a vertex common to the primary and tertiary mirrors; and  
incorporating the mirrors in an optical system.

15 20. The method according to claim 19 wherein in the incorporating step the optical system is selected from the group consisting of hyperspectral imaging sensors, multispectral imaging sensors, infrared imaging systems, electro-optical targeting systems, and remote sensors.